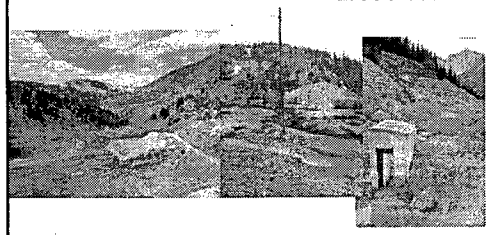
A-18-11 ARSG public meeting Silverton

Cement Creek/Animas River EPA Overview



Sabrina Forrest, EPA Region 8
Site Assessment Manager/NPL Coordinator

EPA's Role in San Juan County

Water Quality Program

- 319 Grant Management
- Provided technical support

Superfund Program

- Prospective Purchaser Agreement at the Mayflower Mill
- Preliminary Assessment and Site Inspection activities
  - Water quality sampling support
- Targeted Brownfields Assessments and one Brownfield Cleanup
- Office of Research and Development Water Treatment Pilot Project
- Emergency Response and Short-term Response or Removal Actions (12 months/$2 Million threshold)
  - Some of these have been BLM-lead projects

ARSG Accomplishments

- Evaluated 1,500 mines
- Focused on 173 draining adits and 157 mine waste sites
- Determined 33 adits and 34 waste sites account for 90% of the mining-related metals loading
- Despite not having Good Samaritan legislation, has remediated/restore d more than 2/3 of the mine waste sites and managed about 7 of the mine drainages.

Agenda

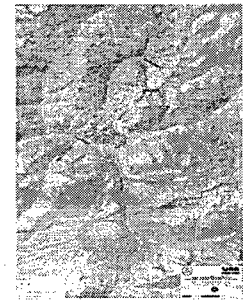
- The problem and reason we are here
- Results of EPA's sampling last fall
- Next steps/Community input
- Questions/Answers/Comments

Things to Think About

- How can it be cleaned up comprehensively?
- What expertise will be needed?
- Who can do it and what resources can various parties bring to the table?
- Who will/can/should pay for it?
- Who should make & have input on the decisions?

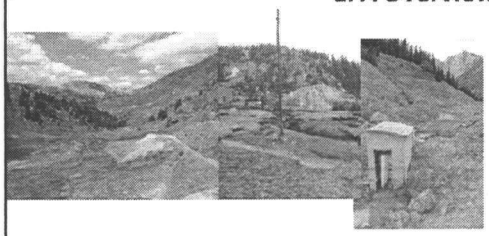
Study Area

- Water quality sampling since 2009
- Source and pathway characterization Fall 2010



A-18-11 ARSG public meeting
Silverton

Cement Creek/Animas River EPA Overview



Sabrina Forrest, EPA Region 8
Site Assessment Manager/NPL Coordinator

EPA's Role in San Juan County

Water Quality Program

- 319 Grant Management
- Provided technical support

Superfund Program

- Prospective Purchaser Agreement at the Mayflower Mill
- Preliminary Assessment and Site Inspection activities
  - Water quality sampling support
- Targeted Brownfields Assessments and one Brownfield Cleanup
- Office of Research and Development Water Treatment Pilot Project
- Emergency Response and Short-term Response or Removal Actions (12 months/$2 Million threshold)
  - Some of these have been BLM-lead projects

ARSG Accomplishments

- Evaluated 1,500 mines
- Focused on 173 draining adits and 157 mine waste sites
- Determined 33 adits and 34 waste sites account for 90% of the mining-related metals loading
- Despite not having Good Samaritan legislation, has remediated/restore d more than 2/3 of the mine waste sites and managed about 7 of the mine drainages.

Agenda

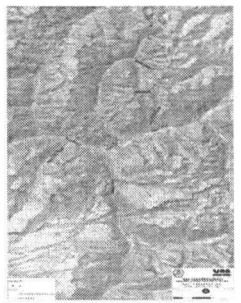
- The problem and reason we are here
- Results of EPA's sampling last fall
- Next steps/Community input
- Questions/Answers/Comments

Things to Think About

- How can it be cleaned up comprehensively?
- What expertise will be needed?
- Who can do it and what resources can various parties bring to the table?
- Who will/can/should pay for it?
- Who should make & have input on the decisions?

Study Area

- Water quality sampling since 2009
- Source and pathway characterization Fall 2010

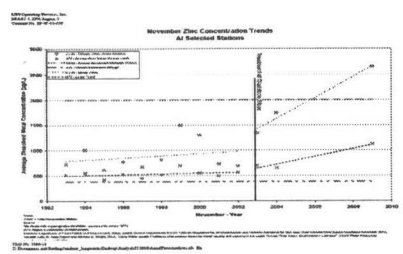


Slide 6

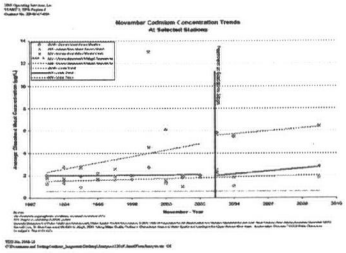
JL1 can't read map

Jlane02, 7/21/2011

The Problem: Worsening Water Quality



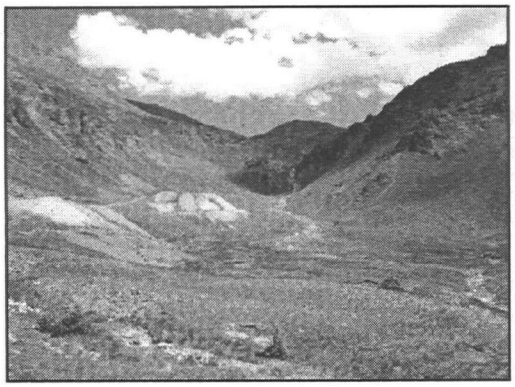
The Problem: Worsening Water Quality

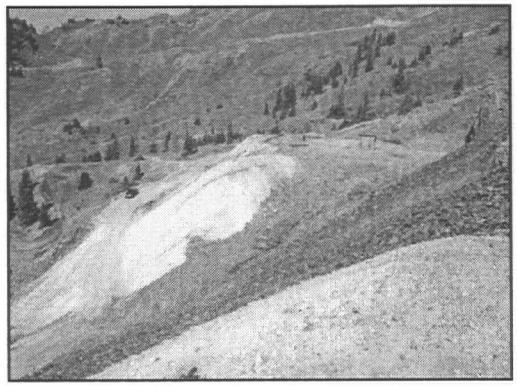


EPA's Findings – Waste Pile Soil Sampling Fall 2010

Contaminants in Waste Piles	Highest detected level (mg/kg)	Benchmark level (mg/kg)	Type of benchmark	Pathway
Arsenic	96.8	23/0.43	RDSC/CRSC	Soil
Cadmium	40	39	RDSC	Soil
Copper	4,600	NA	NA	Soil
Lead	15,500	NA		Soil
Manganese	5,570	11,000	RDSC	Soil
Zinc	11,300	23,000	RDSC	Soil

Notes:
NA – not applicable
RDSC – Risk dose Screening Concentration
CRSC – Cancer Risk Screening Concentration

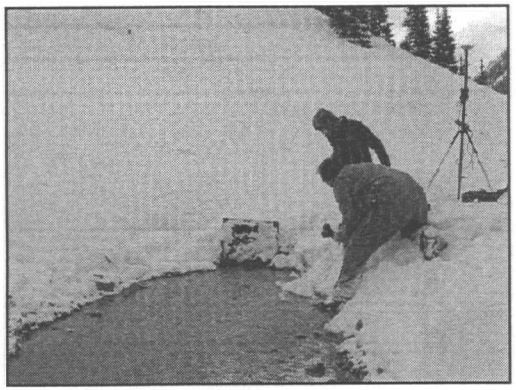




EPA's Findings – Surface Water Fall 2010

Contaminants in Adit Discharges	Highest detected level (µg/L)	Benchmark level (µg/L - Not hardness adjusted)	Type of benchmark	Pathway
Cadmium	50.9	2.0/0.25	CMC/CCC	Surface Water
Copper	4,210	13.0/9.0	CMC/CCC	Surface Water
Lead	255	65.0/2.5	CMC/CCC	Surface Water
Manganese	41,700	NA	NA	Surface Water
Zinc	32,700	120/120	CMC/CCC	Surface Water

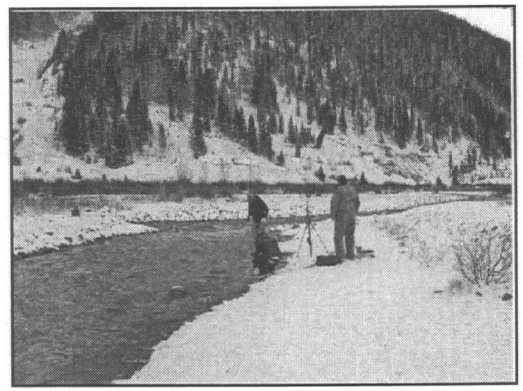
Notes: NA – not applicable
CMC= Criteria Maximum Concentration (Acute)
CCC= Criteria Continuous Concentration (Chronic)



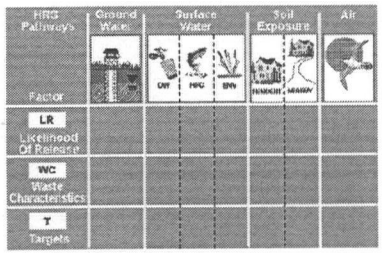
EPA's Findings—Surface Water
Fall 2010

Cement Creek and Animas River Data Analytes	Highest Background Concentration (ug/L)	Surface Water "Level II" Concentration (ug/L)	Surface Water Data Examples showing "Potential" Concentration (ug/L)
Cadmium	4.69	30.3	6.57, 6.19 and 1.76
Copper	291	884	147, 121 and 13.9
Lead	9.44	44.8	17.4, 17.8 and 8.74
Manganese	1940	6,180 - 18,500	4580, 4760, 1270 and 796
Zinc	924	3,210 - 10,700	2340, 2410, and 558

Note: ug/L = micrograms per liter or parts per billion



HRS Structure



Non-EPA Option

1. Voluntary Cleanup PRP-lead (with State oversight)
2. Bring in a major mining company to mine and take over all treatment
3. Incremental Approach: Start treatment with a Technology Demonstration Facility
4. Do nothing

Options that involve EPA resources

1. Superfund Alternative Approach
2. Remedial = Targeted Superfund Site (NPL)
3. Removal Actions

Non-EPA Option: Voluntary Cleanups

Pro's
- Voluntary program
- If cleanup approved, CERCLA liability limited
- NPL-caliber sites require EPA review/concurrence on cleanup plan
- EPA involvement otherwise limited
- All files are public documents and available for public review upon request

Con's
- Site not eligible if:
  - proposed or listed on NPL or
  - subject to a Water Quality Control Division order or agreement
- No requirement for public participation or review of applications
- Verification of cleanup completion is left to the applicant

EPA Option 1: Superfund Alternative Approach

Pro's

- Voluntary – ***only if*** liable, viable, capable, and willing PRPs ***enter into an enforceable agreement*** with EPA
- Follows the Superfund model
  - requirements for community input and following the Superfund process
  - If it fails, can go NPL route
- Possible ***$$ and time saving if*** PRP enters into agreement ***prior to listing***

Con's

- The more complex the site, the less likely PRPs are to holistically address site
- Legal negotiations take time
- Only one in Region 8; possible learning curve
- No EPA funds available to supplement cleanup

See website - http://www.epa.gov/oecaerth/cleanup/superfund/saa.html

EPA Option 2: Targeted Superfund Site

Pro's:

- More funding over long-term
- Finds best options for comprehensive solutions
- Requires local community involvement
- Allows the BLM to prioritize funding and helps with mixed ownership issues
- Potential specialized training and job training grants
- Potential economic benefits of increased jobs related to clean up
- Potential local technical assistance grant money

If PRPs are viable...

- EPA can do the work and recover costs later
- Compels liable and viable parties' participation
- Follows the "Polluter Pays" principle; reduces tax payers' costs

EPA Option 2: Targeted Superfund Site

Con':

- It takes time for the final remedy to be selected.
- Competing with other sites in U.S. for funding – but this happens in all our programs and NPL sites are prioritized for funding
- Perceived stigma

EPA Option 3: Removal Actions

Pro's

- Good for imminent threat sites that can be completed in short term
- EPA can do the work and recover costs later
- Compels liable and viable parties' participation
- Follows the "Polluter Pays" principle; reduces tax payers' costs
- Can be used on appropriate portions of site *after* NPL site proposed

Con's

- 12-month/$2 Million removal thresholds

Why NPL?

Complex problem requires:

- Most comprehensive cleanup approach
- Reliable and permanent solutions
- Available now
- Removal not a realistic option
- Community would have a voice

Why Clean up Cement Creek mine wastes and discharges?

1. Reduce public health risk
2. Improve stream water quality
3. Positively impact recreation and tourism in Silverton and San Juan County.
4. Remove threat of possible failures of waste rock piles from snow pack and storm events.

What's Next?

- Without community and state support, listing is not possible
- If listing is supported, EPA will request a letter from the governor and will propose the site
- If site proposed, draft of the listing documents will be:
  1. Published in the Federal Register for official public comment
  2. Comments would be addressed
- If finalized, it would become a NPL site
- A cleanup process would begin
- The site will be cleaned up

What's Next?

We want your input

- Role of ARSG?
- Site tour planned– September 2011
- Informal availability sessions
- Possible schedule
- Other suggestions

Questions/Comments

EPA Site Contacts

Sabrina Forrest, EPA Region 8 Site Assessment Manager/NPL Coordinator 303-312-6484 forrest.sabrina@epa.gov	Jennifer Lane, EPA Region 8 Community Involvement Coordinator 303-312-6813 lane.jennifer@epa.gov